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 **PALM INTRANET**

## Inventor Information for 10/643016

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|----------------------|------------|---------------|
| STAHMANN, JEFFREY E. | RAMSEY     | MINNESOTA     |
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| US<br>20060129197<br>A1 | US-<br>PGPUB | 20060615 | Atrial capture verification   | 607/28  |                                | Zhang; Geng<br>et al.             |
| US<br>20060116728<br>A1 | US-<br>PGPUB | 20060601 | REDUCTION OF INTERACTION<br>WITH TACHYARRHYTHMIA<br>DETECTION BY NEGATIVE<br>OFFSET PACING                                  | 607/9   |                                | Stahmann;<br>Jeffrey E. et<br>al. |
| US<br>20060116593<br>A1 | US-<br>PGPUB | 20060601 | Cardiac activation sequence<br>monitoring for ischemia detection  | 600/512 |                                | Zhang; Yi et<br>al.               |
| US<br>20060069322<br>A1 | US-<br>PGPUB | 20060330 | Cardiac activation sequence<br>monitoring and tracking  | 600/512 |                                | Zhang; Yi et<br>al.               |
| US<br>20060052830<br>A1 | US-<br>PGPUB | 20060309 | Cardiac rhythm management system<br>with arrhythmia classification and<br>electrode selection                               | 607/4   |                                | Spinelli;<br>Julio C. et al.      |
| US<br>20060041280<br>A1 | US-<br>PGPUB | 20060223 | Thoracic impedance detection with<br>blood resistivity compensation   | 607/17  | 600/484;<br>600/547            | Stahmann;<br>Jeffrey E. et<br>al. |
| US<br>20060036288<br>A1 | US-<br>PGPUB | 20060216 | Pacer with combined defibrillator<br>tailored for bradycardia patients  | 607/5   |                                | Bocek;<br>Joseph M. et<br>al.     |
| US<br>20060025827<br>A1 | US-<br>PGPUB | 20060202 | Apparatus and method for detecting<br>lung sounds using an implanted<br>device  | 607/17  | 600/526;<br>600/586            | Hatlesad;<br>John D. et al.       |
| US<br>20060009812<br>A1 | US-<br>PGPUB | 20060112 | Maximum pacing rate limiter<br>implemented using the evoked<br>response - T-wave interval                                   | 607/27  | 607/17                         | Daum;<br>Douglas R.<br>et al.     |
| US<br>20060004418<br>A1 | US-<br>PGPUB | 20060105 | System and method for managing<br>refractory periods in a cardiac rhythm<br>management device with<br>biventricular sensing | 607/9   |                                | Stahmann;<br>Jeffrey E. et<br>al. |
| US<br>20050288729<br>A1 | US-<br>PGPUB | 20051229 | Coordinated therapy for disordered<br>breathing including baroreflex<br>modulation  | 607/42  |                                | Libbus, Imad<br>et al.            |
| US<br>20050288728<br>A1 | US-<br>PGPUB | 20051229 | Adaptive baroreflex stimulation<br>therapy for disordered breathing   | 607/42  |                                | Libbus, Imad<br>et al.            |
| US<br>20050288719<br>A1 | US-<br>PGPUB | 20051229 | Far-field sensing channel for<br>implantable cardiac device   | 607/9   |                                | Zhang, Geng<br>et al.             |
| US<br>20050288600<br>A1 | US-<br>PGPUB | 20051229 | Automatic orientation determination<br>for ECG measurements using<br>multiple electrodes                                    | 600/510 | 600/512;<br>600/515;<br>607/17 | Zhang, Yi et<br>al.               |
| US<br>20050283197<br>A1 | US-<br>PGPUB | 20051222 | Systems and methods for<br>hypotension  | 607/17  | 607/3;<br>607/9                | Daum,<br>Douglas R.<br>et al.     |
| US<br>20050256547<br>A1 | US-<br>PGPUB | 20051117 | Site reversion in cardiac rhythm<br>management  | 607/27  |                                | Stahmann,<br>Jeffrey E. et<br>al. |

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| US<br>20050251215<br>A1 | US-<br>PGPUB | 20051110 | Cardiac rhythm management system with defibrillation threshold prediction   | 607/8      | 607/28;<br>607/7                  | Dujmovic, Richard<br>Milon JR. et al. |
| US<br>20050240236<br>A1 | US-<br>PGPUB | 20051027 | Implantable medical device with voice responding and recording capacity   | 607/27     |                                   | Daum, Douglas R. et al.               |
| US<br>20050216068<br>A1 | US-<br>PGPUB | 20050929 | Ectopic beat detection algorithm for implantable cardiac rhythm management device   | 607/25     | 600/510                           | Lee, Kent et al.                      |
| US<br>20050203581<br>A1 | US-<br>PGPUB | 20050915 | Cardiac rhythm management system with arrhythmia classification and electrode selection                                   | 607/9      |                                   | Spinelli, Julio C. et al.             |
| US<br>20050197674<br>A1 | US-<br>PGPUB | 20050908 | Wireless ECG in implantable devices   | 607/9      |                                   | McCabe, Aaron et al.                  |
| US<br>20050187594<br>A1 | US-<br>PGPUB | 20050825 | System and method for transmitting energy to and establishing a communications network with one or more implanted devices | 607/61     | 607/33                            | Hatlestad, John D.                    |
| US<br>20050187588<br>A1 | US-<br>PGPUB | 20050825 | System and method for displaying cardiac events   | 607/27     | 600/510                           | Stahmann, Jeffrey E. et al.           |
| US<br>20050165453<br>A1 | US-<br>PGPUB | 20050728 | Method and apparatus for maintaining synchronized pacing  | 607/9      |                                   | Stahmann, Jeffrey E. et al.           |
| US<br>20050145246<br>A1 | US-<br>PGPUB | 20050707 | Posture detection system and method   | 128/203.14 | 607/17;<br>607/3                  | Hartley, Jesse W. et al.              |
| US<br>20050142070<br>A1 | US-<br>PGPUB | 20050630 | Methods and systems for assessing pulmonary disease with drug therapy control   | 424/45     | 604/890.1                         | Hartley, Jesse W. et al.              |
| US<br>20050137629<br>A1 | US-<br>PGPUB | 20050623 | Trended measurement of cardiac resynchronization therapy  | 607/9      | 600/510                           | Dyjach, John A. et al.                |
| US<br>20050137626<br>A1 | US-<br>PGPUB | 20050623 | Drug delivery system and method employing external drug delivery device in conjunction with computer network              | 607/3      | 604/891.1                         | Pastore, Joseph M. et al.             |
| US<br>20050115561<br>A1 | US-<br>PGPUB | 20050602 | Patient monitoring, diagnosis, and/or therapy systems and methods   | 128/200.24 | 128/204.1<br>8;<br>128/204.2<br>3 | Stahmann, Jeffrey E. et al.           |
| US<br>20050113710<br>A1 | US-<br>PGPUB | 20050526 | Implantable device employing movement sensing for detecting sleep-related disorders                                       | 600/534    | 600/536;<br>600/546;<br>600/595   | Stahmann, Jeffrey E. et al.           |
| US<br>20050109339<br>A1 | US-<br>PGPUB | 20050526 | Respiratory therapy control based on cardiac cycle  | 128/204.18 | 128/204.2<br>3                    | Stahmann, Jeffrey E. et al.           |
| US                      | US-          | 20050526 | Cardiac pacing controlled via   | 128/204.18 | 128/204.2                         | Stahmann,                             |

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| 20050109338<br>A1       | PGPUB        |          | respiration therapy device   |            | 3  | Jeffrey E. et al.           |
| US<br>20050107838<br>A1 | US-<br>PGPUB | 20050519 | Subcutaneous cardiac rhythm management with disordered breathing detection and treatment                           | 607/17     | 607/42   | Lovett, Eric G. et al.      |
| US<br>20050085738<br>A1 | US-<br>PGPUB | 20050421 | Sleep logbook  | 600/529    | 600/484;<br>600/595  | Stahmann, Jeffrey E. et al. |
| US<br>20050081847<br>A1 | US-<br>PGPUB | 20050421 | Automatic activation of medical processes  | 128/200.24 | 128/204.2<br>3; 607/9  | Lee, Kent et al.            |
| US<br>20050080463<br>A1 | US-<br>PGPUB | 20050414 | System and method for detecting an involuntary muscle movement disorder  | 607/62     | 600/546;<br>600/595;<br>604/66   | Stahmann, Jeffrey E. et al. |
| US<br>20050080461<br>A1 | US-<br>PGPUB | 20050414 | System and method for moderating a therapy delivered during sleep using physiologic data acquired during non-sleep | 607/17     |  | Stahmann, Jeffrey E. et al. |
| US<br>20050080348<br>A1 | US-<br>PGPUB | 20050414 | Medical event logbook system and method  | 600/529    | 600/484  | Stahmann, Jeffrey E. et al. |
| US<br>20050076909<br>A1 | US-<br>PGPUB | 20050414 | Synergistic use of medical devices for detecting medical disorders   | 128/204.23 | 128/920;<br>600/300;<br>607/6;<br>607/62   | Stahmann, Jeffrey E. et al. |
| US<br>20050076908<br>A1 | US-<br>PGPUB | 20050414 | Autonomic arousal detection system and method  | 128/204.23 | 600/509;<br>600/519;<br>600/529;<br>600/544;<br>600/546;<br>600/547;<br>607/6;<br>607/62 | Lee, Kent et al.            |
| US<br>20050076905<br>A1 | US-<br>PGPUB | 20050414 | Use of external respiratory therapy device to detect cardiac electrical activity                                   | 128/203.14 |  | Stahmann, Jeffrey E. et al. |
| US<br>20050074741<br>A1 | US-<br>PGPUB | 20050407 | System and method for discrimination of central and obstructive disordered breathing events                        | 434/433    |  | Lee, Kent et al.            |
| US<br>20050065572<br>A1 | US-<br>PGPUB | 20050324 | Diagnosis and/or therapy using blood chemistry/expired gas parameter analysis                                      | 607/42     | 607/17;<br>607/3   | Hartley, Jesse W. et al.    |
| US<br>20050065567<br>A1 | US-<br>PGPUB | 20050324 | Therapy control based on cardiopulmonary status  | 607/17     | 128/204.2<br>3   | Lee, Kent et al.            |
| US<br>20050065566<br>A1 | US-<br>PGPUB | 20050324 | Rate regularization of cardiac pacing for disordered breathing therapy   | 607/17     |  | Hartley, Jesse W. et al.    |
| US                      | US-          | 20050324 | System and method for cardiac  | 607/9      |  | Kramer,                     |

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| 20050065565<br>A1       | PGPUB        |          | rhythm management with<br>synchronized pacing protection<br>period                        |            |                                   | Andrew P. et<br>al.               |
| US<br>20050065560<br>A1 | US-<br>PGPUB | 20050324 | Snoring detection system and method   | 607/6      |                                   | Lee, Kent et<br>al.               |
| US<br>20050065448<br>A1 | US-<br>PGPUB | 20050324 | Methods and systems for assessing<br>pulmonary disease                                    | 600/529    | 128/204.2<br>3                    | Stahmann,<br>Jeffrey E. et<br>al. |
| US<br>20050065447<br>A1 | US-<br>PGPUB | 20050324 | System and method for<br>characterizing patient respiration                               | 600/529    |                                   | Lee, Kent et<br>al.               |
| US<br>20050061323<br>A1 | US-<br>PGPUB | 20050324 | Methods and systems for control of<br>gas therapy   | 128/204.23 | 128/204.2<br>1                    | Lee, Kent et<br>al.               |
| US<br>20050061320<br>A1 | US-<br>PGPUB | 20050324 | Coordinated use of respiratory and<br>cardiac therapies for sleep disordered<br>breathing | 128/204.18 | 128/204.2<br>3                    | Lee, Kent et<br>al.               |
| US<br>20050061319<br>A1 | US-<br>PGPUB | 20050324 | Methods and systems for implantably<br>monitoring external breathing<br>therapy           | 128/204.18 | 128/204.2<br>3                    | Hartley,<br>Jesse W. et<br>al.    |
| US<br>20050061315<br>A1 | US-<br>PGPUB | 20050324 | Feedback system and method for<br>sleep disordered breathing therapy                      | 128/200.24 | 128/204.2<br>1;<br>128/204.2<br>3 | Lee, Kent et<br>al.               |
| US<br>20050049492<br>A1 | US-<br>PGPUB | 20050303 | Acoustic physiological sensor   | 600/437    |                                   | Sweeney,<br>Robert J. et<br>al.   |
| US<br>20050043772<br>A1 | US-<br>PGPUB | 20050224 | Therapy triggered by prediction of<br>disordered breathing                                | 607/42     |                                   | Stahmann,<br>Jeffrey E. et<br>al. |
| US<br>20050043644<br>A1 | US-<br>PGPUB | 20050224 | Prediction of disordered breathing  | 600/529    |                                   | Stahmann,<br>Jeffrey E. et<br>al. |
| US<br>20050042589<br>A1 | US-<br>PGPUB | 20050224 | Sleep quality data collection and<br>evaluation   | 434/262    |                                   | Hatlestad,<br>John D. et al.      |
| US<br>20050039745<br>A1 | US-<br>PGPUB | 20050224 | Adaptive therapy for disordered<br>breathing  | 128/204.18 |                                   | Stahmann,<br>Jeffrey E. et<br>al. |
| US<br>20050021099<br>A1 | US-<br>PGPUB | 20050127 | Mode transition timing for<br>synchronized pacing   | 607/9      |                                   | Stahmann,<br>Jeffrey E. et<br>al. |
| US<br>20050004610<br>A1 | US-<br>PGPUB | 20050106 | Cardiac cycle synchronized sampling<br>of impedance signal                                | 607/17     |                                   | Kim, Jaeho<br>et al.              |
| US<br>20050004609<br>A1 | US-<br>PGPUB | 20050106 | Implantable devices and methods<br>using frequency-domain analysis of<br>thoracic signal  | 607/17     |                                   | Stahmann,<br>Jeffrey E. et<br>al. |
| US                      | US-          | 20050106 | Safety pacing in multi-site CRM   | 607/9      |                                   | Stahmann,                         |

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| 20050004606<br>A1       | PGPUB        |          | devices  |         |         | Jeffrey E. et al.           |
| US<br>20040243191<br>A1 | US-<br>PGPUB | 20041202 | Reduction of left-ventricular offset interaction with tachyarrhythmia detection  | 607/9   |         | Baker, Kenneth L. et al.    |
| US<br>20040243188<br>A1 | US-<br>PGPUB | 20041202 | Method and system for display of cardiac event intervals in a resynchronization pacemaker  | 607/9   |         | Vanderlinde, Scott et al.   |
| US<br>20040243014<br>A1 | US-<br>PGPUB | 20041202 | Cardiac waveform template creation, maintenance and use  | 600/510 | 600/509 | Lee, Kent et al.            |
| US<br>20040230239<br>A1 | US-<br>PGPUB | 20041118 | Cardiac rhythm management system with staggered pulses for coordination therapy  | 607/14  |         | Stahmann, Jeffrey E. et al. |
| US<br>20040230238<br>A1 | US-<br>PGPUB | 20041118 | Cardiac rhythm management system with staggered pulses for coordination therapy  | 607/9   | 607/17  | Stahmann, Jeffrey E. et al. |
| US<br>20040230237<br>A1 | US-<br>PGPUB | 20041118 | Cardiac rhythm management system with staggered pulses for coordination therapy  | 607/9   |         | Stahmann, Jeffrey E. et al. |
| US<br>20040225330<br>A1 | US-<br>PGPUB | 20041111 | System and method for timing synchronized pacing   | 607/9   |         | Kramer, Andrew P. et al.    |
| US<br>20040215259<br>A1 | US-<br>PGPUB | 20041028 | Method and apparatus for treating irregular ventricular contractions such as during atrial arrhythmia  | 607/9   |         | Krig, David B. et al.       |
| US<br>20040215245<br>A1 | US-<br>PGPUB | 20041028 | Method and apparatus for delivering defibrillation shock therapy while reducing electrical dispersion due to ventricular conduction disorder | 607/5   |         | Stahmann, Jeffrey E. et al. |
| US<br>20040172076<br>A1 | US-<br>PGPUB | 20040902 | Apparatus and method for pacing mode switching during atrial tachyarrhythmias  | 607/14  |         | Stahmann, Jeffrey E. et al. |
| US<br>20040143305<br>A1 | US-<br>PGPUB | 20040722 | Cardiac rhythm management system providing control of pacing features with a reduced number of variables                                     | 607/60  |         | Kalgren, James et al.       |
| US<br>20040138714<br>A1 | US-<br>PGPUB | 20040715 | Cardiac rhythm management system with defibrillation threshold prediction  | 607/8   |         | Daum, Douglas R. et al.     |
| US<br>20040133247<br>A1 | US-<br>PGPUB | 20040708 | Method for ischemia detection by implantable cardiac device  | 607/17  |         | Stahmann, Jeffrey E. et al. |
| US<br>20040127948<br>A1 | US-<br>PGPUB | 20040701 | Reduction of interaction with tachyarrhythmia detection by negative offset pacing  | 607/14  |         | Stahmann, Jeffrey E. et al. |
| US<br>20040127807<br>A1 | US-<br>PGPUB | 20040701 | Apparatus and method for detecting lung sounds using an implanted device   | 600/529 |         | Hatlesad, John D. et al.    |
| US<br>20040122487       | US-<br>PGPUB | 20040624 | Advanced patient management with composite parameter indices   | 607/60  |         | Hatlestad, John et al.      |

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| US<br>20040122486<br>A1 | US-<br>PGPUB | 20040624 | Advanced patient management for acquiring, trending and displaying health-related parameters               | 607/60  |                               | Stahmann, Jeffrey E. et al. |
| US<br>20040122485<br>A1 | US-<br>PGPUB | 20040624 | Advanced patient management for reporting multiple health-related parameters                               | 607/60  |                               | Stahmann, Jeffrey E. et al. |
| US<br>20040122484<br>A1 | US-<br>PGPUB | 20040624 | Advanced patient management for defining, identifying and using predetermined health-related events        | 607/60  |                               | Hatlestad, John et al.      |
| US<br>20040122297<br>A1 | US-<br>PGPUB | 20040624 | Advanced patient management for identifying, displaying and assisting with correlating health-related data | 600/300 |                               | Stahmann, Jeffrey E. et al. |
| US<br>20040122296<br>A1 | US-<br>PGPUB | 20040624 | Advanced patient management for triaging health-related data   | 600/300 | 705/2;<br>707/104.1           | Hatlestad, John et al.      |
| US<br>20040122295<br>A1 | US-<br>PGPUB | 20040624 | Advanced patient management for triaging health-related data using color codes                             | 600/300 |                               | Hatlestad, John et al.      |
| US<br>20040122294<br>A1 | US-<br>PGPUB | 20040624 | Advanced patient management with environmental data  | 600/300 |                               | Hatlestad, John et al.      |
| US<br>20040116820<br>A1 | US-<br>PGPUB | 20040617 | Respiration signal measurement apparatus, systems, and methods   | 600/547 |                               | Daum, Douglas R. et al.     |
| US<br>20040111041<br>A1 | US-<br>PGPUB | 20040610 | Sleep detection using an adjustable threshold  | 600/544 | 600/481;<br>600/529;<br>607/9 | Ni, Quan et al.             |
| US<br>20040111040<br>A1 | US-<br>PGPUB | 20040610 | Detection of disordered breathing  | 600/534 |                               | Ni, Quan et al.             |
| US<br>20040102908<br>A1 | US-<br>PGPUB | 20040527 | MINUTE VENTILATION SENSOR WITH AUTOMATIC HIGH PASS FILTER ADJUSTMENT                                       | 702/45  |                               | Larson, Dennis E. et al.    |
| US<br>20040088016<br>A1 | US-<br>PGPUB | 20040506 | Rate-adaptive pacemaker with compensation for long-term variations in average exertion level               | 607/19  |                               | Daum, Douglas R. et al.     |
| US<br>20040082976<br>A1 | US-<br>PGPUB | 20040429 | System and method for correlation of patient health information and implant device data                    | 607/32  |                               | Kalgren, James et al.       |
| US<br>20040073128<br>A1 | US-<br>PGPUB | 20040415 | Detection of congestion from monitoring patient response to a recumbent position                           | 600/533 |                               | Hatlestad, John et al.      |
| US<br>20040049237<br>A1 | US-<br>PGPUB | 20040311 | Minute ventilation sensor with dynamically adjusted excitation current                                     | 607/17  |                               | Larson, Dennis E. et al.    |
| US<br>20040015195<br>A1 | US-<br>PGPUB | 20040122 | Calibration of adaptive-rate pacing using intrinsic chronotropic response                                  | 607/17  |                               | Daum, Douglas R. et al.     |
| US                      | US-          | 20040115 | Apparatus and method for ventricular   | 607/25  |                               | Kramer,                     |

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| 20040010295<br>A1       | PGPUB        |          | rate regularization  |         |         | Andrew P. et al.            |
| US<br>20030233132<br>A1 | US-<br>PGPUB | 20031218 | Method and apparatus for detecting oscillations in cardiac rhythm  | 607/17  |         | Pastore, Joseph M. et al.   |
| US<br>20030233131<br>A1 | US-<br>PGPUB | 20031218 | Apparatus and method for ventricular rate regularization   | 607/9   |         | Kramer, Andrew P. et al.    |
| US<br>20030220670<br>A1 | US-<br>PGPUB | 20031127 | System and method for eliminating cross-talk due to far-field signals  | 607/9   |         | Stahmann, Jeffrey E. et al. |
| US<br>20030199937<br>A1 | US-<br>PGPUB | 20031023 | Atrial interval based heart rate variability diagnostic for cardiac rhythm management system                       | 607/25  | 600/515 | Carlson, Gerrard M. et al.  |
| US<br>20030199931<br>A1 | US-<br>PGPUB | 20031023 | System and method for managing refractory periods in a cardiac rhythm management device with biventricular sensing | 607/9   | 607/25  | Stahmann, Jeffrey E. et al. |
| US<br>20030195575<br>A1 | US-<br>PGPUB | 20031016 | System and method for timing synchronized pacing   | 607/9   |         | Kramer, Andrew P. et al.    |
| US<br>20030176894<br>A1 | US-<br>PGPUB | 20030918 | Site reversion in cardiac rhythm management  | 607/9   |         | Stahmann, Jeffrey E. et al. |
| US<br>20030167081<br>A1 | US-<br>PGPUB | 20030904 | Coronary sinus lead with thermal sensor and method therefor  | 607/122 |         | Zhu, Qingsheng et al.       |
| US<br>20030149454<br>A1 | US-<br>PGPUB | 20030807 | Method and apparatus for maintaining synchronized pacing   | 607/25  |         | Stahmann, Jeffrey E. et al. |
| US<br>20030149452<br>A1 | US-<br>PGPUB | 20030807 | Method and apparatus for avoiding unwanted sensing in a cardiac rhythm management device                           | 607/9   |         | Tang, Zhengnian et al.      |
| US<br>20030135243<br>A1 | US-<br>PGPUB | 20030717 | Maximum pacing rate limiter implemented using the evoked response -T- wave interval                                | 607/25  |         | Daum, Douglas R. et al.     |
| US<br>20030120316<br>A1 | US-<br>PGPUB | 20030626 | Cardiac rhythm management system with arrhythmia classification and electrode selection                            | 607/14  |         | Spinelli, Julio C. et al.   |
| US<br>20030120315<br>A1 | US-<br>PGPUB | 20030626 | Apparatus and method for multi-site anti-tachycardia pacing  | 607/14  |         | Spinelli, Julio C. et al.   |
| US<br>20030120314<br>A1 | US-<br>PGPUB | 20030626 | Cardiac rhythm management system with remotely activated capture verification for CHF and other patients           | 607/9   |         | Warren, Jay A. et al.       |
| US<br>20030105497<br>A1 | US-<br>PGPUB | 20030605 | Implantable cardiac disease management device with trigger-stored polysomnogram and phonocardiogram                | 607/17  |         | Zhu, Qingsheng et al.       |



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| US<br>20030097155<br>A1 | US-<br>PGPUB | 20030522 | Triggered storage of diagnostic data associated with compromised resynchronization therapy                              | 607/9   |         | Stahmann, Jeffrey E. et al. |
| US<br>20030093123<br>A1 | US-<br>PGPUB | 20030515 | Pace counter isolation for cardiac resynchronization pacing   | 607/9   |         | Stahmann, Jeffrey E. et al. |
| US<br>20030083704<br>A1 | US-<br>PGPUB | 20030501 | Reduction of left-ventricular offset interaction with tachyarrhythmia detection   | 607/14  |         | Baker, Kenneth L. et al.    |
| US<br>20030069610<br>A1 | US-<br>PGPUB | 20030410 | Apparatus and method for ventricular rate regularization with biventricular sensing                                     | 607/25  |         | Kramer, Andrew P. et al.    |
| US<br>20030069607<br>A1 | US-<br>PGPUB | 20030410 | Safety pacing in multi-site CRM devices   | 607/9   |         | Stahmann, Jeffrey E. et al. |
| US<br>20030055461<br>A1 | US-<br>PGPUB | 20030320 | Cardiac rhythm management systems and methods predicting congestive heart failure status                                | 607/17  |         | Girouard, Steven D. et al.  |
| US<br>20030028222<br>A1 | US-<br>PGPUB | 20030206 | System and method for cardiac rhythm management with dynamically adjusted synchronized chamber pacing protection period | 607/9   |         | Stahmann, Jeffrey E.        |
| US<br>20030019322<br>A1 | US-<br>PGPUB | 20030130 | Adjustable ramp helix   | 74/567  |         | Lee, Kent                   |
| US<br>20030004551<br>A1 | US-<br>PGPUB | 20030102 | Cardiac rhythm management system with atrial shock timing optimization  | 607/14  |         | Chen, Victor T. et al.      |
| US<br>20030004550<br>A1 | US-<br>PGPUB | 20030102 | Mode transition timing for synchronized pacing  | 607/9   |         | Stahmann, Jeffrey E. et al. |
| US<br>20020193847<br>A1 | US-<br>PGPUB | 20021219 | Implantable medical device with voice responding and recording capacity   | 607/60  |         | Daum, Douglas R. et al.     |
| US<br>20020161310<br>A1 | US-<br>PGPUB | 20021031 | Implantable medical device employing single drive, dual sense impedance measuring                                       | 600/547 |         | Daum, Douglas R.            |
| US<br>20020151777<br>A1 | US-<br>PGPUB | 20021017 | TRANSMYOCARDIAL REVASCULARIZATION USING ULTRASOUND  | 600/407 | 600/439 | Hynynen, Kullervo et al.    |
| US<br>20020147476<br>A1 | US-<br>PGPUB | 20021010 | Cardiac rhythm management system adjusting rate response factor for treating hypotension                                | 607/17  |         | Daum, Douglas R.            |
| US<br>20020147475<br>A1 | US-<br>PGPUB | 20021010 | Cardiac rhythm management system for hypotension  | 607/17  |         | Scheiner, Avram et al.      |
| US<br>20020147469<br>A1 | US-<br>PGPUB | 20021010 | Device and method for ventricular tracking and pacing   | 607/9   |         | Kramer, Andrew P. et al.    |
| US                      | US-          | 20020919 | Cardiac rhythm management system  | 607/14  |         | Daum,                       |

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| 20020133206<br>A1       | PGPUB        |          | with defibrillation threshold prediction   |         |  | Douglas R. et al.           |
| US<br>20020128564<br>A1 | US-<br>PGPUB | 20020912 | Atrial interval based heart rate variability diagnostic for cardiac rhythm management system                       | 600/509 |  | Carlson, Gerrard M. et al.  |
| US<br>20020120311<br>A1 | US-<br>PGPUB | 20020829 | Expert system and method   | 607/72  |  | Lindh, Par et al.           |
| US<br>20020120298<br>A1 | US-<br>PGPUB | 20020829 | Apparatus and method for ventricular rate regularization   | 607/5   |  | Kramer, Andrew P. et al.    |
| US<br>20020107551<br>A1 | US-<br>PGPUB | 20020808 | Pacing and sensing vectors   | 607/9   |  | Stahmann, Jeffrey E. et al. |
| US<br>20020087198<br>A1 | US-<br>PGPUB | 20020704 | Apparatus and method for ventricular rate regularization   | 607/9   |  | Kramer, Andrew P. et al.    |
| US<br>20020082663<br>A1 | US-<br>PGPUB | 20020627 | Pace counter isolation for cardiac resynchronization pacing  | 607/27  |  | Stahmann, Jeffrey E. et al. |
| US<br>20020082662<br>A1 | US-<br>PGPUB | 20020627 | Method and apparatus for display of ventricular electrograms   | 607/27  |  | Vanderlinde, Scott et al.   |
| US<br>20020082660<br>A1 | US-<br>PGPUB | 20020627 | Apparatus and method for pacing mode switching during atrial tachyarrhythmias                                      | 607/14  |  | Stahmann, Jeffrey E. et al. |
| US<br>20020082659<br>A1 | US-<br>PGPUB | 20020627 | Cardiac rhythm management system with staggered pulses for coordination therapy                                    | 607/9   |  | Stahmann, Jeffrey E. et al. |
| US<br>20020082657<br>A1 | US-<br>PGPUB | 20020627 | MODE TRANSITION TIMING FOR SYNCHRONIZED PACING   | 607/9   |  | Stahmann, Jeffrey E. et al. |
| US<br>20020082656<br>A1 | US-<br>PGPUB | 20020627 | Method and apparatus for maintaining synchronized pacing   | 607/9   |  | Stahmann, Jeffrey E. et al. |
| US<br>20020082655<br>A1 | US-<br>PGPUB | 20020627 | System and method for cardiac rhythm management with synchronized pacing protection period                         | 607/9   |  | Kramer, Andrew P. et al.    |
| US<br>20020082654<br>A1 | US-<br>PGPUB | 20020627 | System and method for timing synchronized pacing   | 607/9   |  | Kramer, Andrew P. et al.    |
| US<br>20020082653<br>A1 | US-<br>PGPUB | 20020627 | System and method for managing refractory periods in a cardiac rhythm management device with biventricular sensing | 607/9   |  | Stahmann, Jeffrey E. et al. |
| US<br>20020082652<br>A1 | US-<br>PGPUB | 20020627 | METHOD FOR COLLECTION OF BIVENTRICULAR HISTOGRAMS  | 607/9   |  | Wentkowski, Rene H. et al.  |
| US                      | US-          | 20020627 | Pacing and sensing vectors   | 607/9   |  | Stahmann,                   |

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| 20020082651<br>A1       | PGPUB        |          |  |         |                    | Jeffrey E. et al.           |
| US<br>20020082650<br>A1 | US-<br>PGPUB | 20020627 | System and method for eliminating cross-talk due to far-field signals                                    | 607/9   |                    | Stahmann, Jeffrey E. et al. |
| US<br>20020082649<br>A1 | US-<br>PGPUB | 20020627 | Safety pacing in multi-site CRM devices  | 607/9   |                    | Stahmann, Jeffrey E. et al. |
| US<br>20020082648<br>A1 | US-<br>PGPUB | 20020627 | Apparatus and method for ventricular rate regularization with biventricular sensing                      | 607/9   |                    | Kramer, Andrew P. et al.    |
| US<br>20020082509<br>A1 | US-<br>PGPUB | 20020627 | Method and system for display of cardiac event intervals in a resynchronization pacemaker                | 600/510 |                    | Vanderlinde, Scott et al.   |
| US<br>20020077859<br>A1 | US-<br>PGPUB | 20020620 | System and method for displaying cardiac events  | 705/3   |                    | Stahmann, Jeffrey E. et al. |
| US<br>20020077668<br>A1 | US-<br>PGPUB | 20020620 | Cardiac rhythm management system providing control of pacing features with a reduced number of variables | 607/9   |                    | Kalgren, James et al.       |
| US<br>20020077562<br>A1 | US-<br>PGPUB | 20020620 | System and method for correlation of patient health information and implant device data                  | 600/510 |                    | Kalgren, James et al.       |
| US<br>20020068959<br>A1 | US-<br>PGPUB | 20020606 | Cardiac rhythm management system with remotely activated capture verification for CHF and other patients | 607/28  |                    | Warren, Jay A. et al.       |
| US<br>20010016759<br>A1 | US-<br>PGPUB | 20010823 | System providing ventricular pacing and biventricular coordination                                       | 607/9   |                    | Kramer, Andrew P. et al.    |
| US 7092757<br>B2        | USPAT        | 20060815 | Minute ventilation sensor with dynamically adjusted excitation current                                   | 607/17  | 607/18;<br>607/24  | Larson; Dennis E. et al.    |
| US 7062325<br>B1        | USPAT        | 20060613 | Method and apparatus for treating irregular ventricular contractions such as during atrial arrhythmia    | 607/14  | 607/4              | Krig; David B. et al.       |
| US 7058449<br>B2        | USPAT        | 20060606 | Safety pacing in multi-site CRM devices  | 607/17  | 607/18;<br>607/9   | Stahmann; Jeffrey E. et al. |
| US 7050854<br>B2        | USPAT        | 20060523 | Calibration of adaptive-rate pacing using intrinsic chronotropic response                                | 607/17  | 607/19             | Daum; Douglas R. et al.     |
| US 7047066<br>B2        | USPAT        | 20060516 | Method and system for display of cardiac event intervals in a resynchronization pacemaker                | 600/510 | 600/523            | Vanderlinde; Scott et al.   |
| US 7047065<br>B2        | USPAT        | 20060516 | System and method for correlation of patient health information and implant device data                  | 600/510 |                    | Kalgren; James et al.       |
| US 7039462<br>B2        | USPAT        | 20060502 | Method and apparatus for detecting oscillations in cardiac rhythm  | 607/14  | 600/547;<br>607/24 | Pastore; Joseph M. et       |

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|               |       |          |   |         |                          | al.                         |
| US 7016732 B2 | USPAT | 20060321 | Cardiac rhythm management system with remotely activated capture verification for CHF and other patients                | 607/28  | 600/510; 607/27; 607/32  | Warren; Jay A. et al.       |
| US 7016729 B2 | USPAT | 20060321 | Reduction of interaction with tachyarrhythmia detection by negative offset pacing                                       | 607/14  | 607/9                    | Stahmann; Jeffrey E. et al. |
| US 7003347 B2 | USPAT | 20060221 | System and method for cardiac rhythm management with dynamically adjusted synchronized chamber pacing protection period | 607/9   | 607/14; 607/25; 607/4    | Stahmann; Jeffrey E.        |
| US 6988002 B2 | USPAT | 20060117 | Apparatus and method for ventricular rate regularization with biventricular sensing                                     | 607/18  | 607/19; 607/25           | Kramer; Andrew P. et al.    |
| US 6963778 B2 | USPAT | 20051108 | Maximum pacing rate limiter implemented using the evoked response-T-wave interval                                       | 607/25  |                          | Daum; Douglas R. et al.     |
| US 6963774 B2 | USPAT | 20051108 | Safety pacing in multi-site CRM devices   | 607/9   | 607/18                   | Stahmann; Jeffrey E. et al. |
| US 6957100 B2 | USPAT | 20051018 | Method and system for display of cardiac event intervals in a resynchronization pacemaker                               | 600/510 | 600/523                  | Vanderlinde; Scott et al.   |
| US 6949075 B2 | USPAT | 20050927 | Apparatus and method for detecting lung sounds using an implanted device  | 600/586 | 600/300; 600/529; 607/9  | Hatlesad; John D. et al.    |
| US 6944499 B2 | USPAT | 20050913 | Method and apparatus for avoiding unwanted sensing in a cardiac rhythm management device                                | 607/9   |                          | Tang; Zhengnian et al.      |
| US 6941167 B2 | USPAT | 20050906 | System and method for displaying cardiac events   | 600/523 | 607/2; 607/27; 607/30    | Stahmann; Jeffrey E. et al. |
| US 6922589 B2 | USPAT | 20050726 | Site reversion in cardiac rhythm management   | 607/27  | 607/28                   | Stahmann; Jeffrey E. et al. |
| US 6912420 B2 | USPAT | 20050628 | Cardiac rhythm management system for hypotension  | 607/17  |                          | Scheiner; Avram et al.      |
| US 6909916 B2 | USPAT | 20050621 | Cardiac rhythm management system with arrhythmia classification and electrode selection                                 | 607/9   | 600/515; 600/518; 607/14 | Spinelli; Julio C. et al.   |
| US 6907289 B2 | USPAT | 20050614 | Triggered storage of diagnostic data associated with compromised resynchronization therapy                              | 607/27  | 607/9                    | Stahmann; Jeffrey E. et al. |
| US 6907288 B2 | USPAT | 20050614 | Cardiac rhythm management system adjusting rate response factor for treating hypotension                                | 607/17  |                          | Daum; Douglas R.            |
| US 6885890 B2 | USPAT | 20050426 | Apparatus and method for multi-site anti-tachycardia pacing   | 607/14  |                          | Spinelli; Julio C. et al.   |
| US 6871095    | USPAT | 20050322 | Method and apparatus for  | 607/9   |                          | Stahmann;                   |

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| B2            |       |          | maintaining synchronized pacing  |         |   | Jeffrey E. et al.           |
| US 6868346 B2 | USPAT | 20050315 | Minute ventilation sensor with automatic high pass filter adjustment                                     | 702/45  |   | Larson; Dennis E. et al.    |
| US 6865424 B2 | USPAT | 20050308 | Implantable medical device with voice responding and recording capacity                                  | 607/62  | 600/586   | Daum; Douglas R. et al.     |
| US 6859664 B2 | USPAT | 20050222 | Cardiac rhythm management system with defibrillation threshold prediction                                | 607/8   | 607/5   | Daum; Douglas R. et al.     |
| US 6829505 B2 | USPAT | 20041207 | System and method for cardiac rhythm management with synchronized pacing protection period               | 607/9   |   | Kramer; Andrew P. et al.    |
| US 6810287 B2 | USPAT | 20041026 | Implantable cardiac disease management device with trigger-stored polysomnogram and phonocardiogram      | 607/17  |   | Zhu; Qingsheng et al.       |
| US 6795734 B2 | USPAT | 20040921 | Method and apparatus for display of ventricular electrograms   | 607/27  | 600/509; 600/518; 600/523; 607/19; 607/25; 607/31; 607/63 | Vanderlinde; Scott et al.   |
| US 6760623 B2 | USPAT | 20040706 | Cardiac rhythm management system with staggered pulses for coordination therapy                          | 607/9   |   | Stahmann; Jeffrey E. et al. |
| US 6757562 B2 | USPAT | 20040629 | Reduction of left-ventricular offset interaction with tachyarrhythmia detection                          | 607/14  |   | Baker; Kenneth L. et al.    |
| US 6751502 B2 | USPAT | 20040615 | Cardiac rhythm management system with defibrillation threshold prediction                                | 607/8   | 607/5   | Daum; Douglas R. et al.     |
| US 6748272 B2 | USPAT | 20040608 | Atrial interval based heart rate variability diagnostic for cardiac rhythm management system             | 607/14  | 600/508; 600/515; 607/9                                   | Carlson; Gerrard M. et al.  |
| US 6684101 B2 | USPAT | 20040127 | Implantable medical device employing single drive, dual sense impedance measuring                        | 600/547 | 600/483; 600/484  | Daum; Douglas R.            |
| US 6665558 B2 | USPAT | 20031216 | System and method for correlation of patient health information and implant device data                  | 600/510 | 607/30; 607/31; 607/59                                    | Kalgren; James et al.       |
| US 6618618 B2 | USPAT | 20030909 | Cardiac rhythm management system providing control of pacing features with a reduced number of variables | 607/9   | 607/30  | Kalgren; James et al.       |
| US 6574506 B2 | USPAT | 20030603 | System and method for timing synchronized pacing   | 607/9   | 607/15  | Kramer; Andrew P. et al.    |

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| US 6564100<br>B2 | USPAT | 20030513 | Cardiac rhythm management system with remotely activated capture verification for CHF and other patients           | 607/28  |                               | Warren; Jay A. et al.       |
| US 6553258<br>B2 | USPAT | 20030422 | System and method for managing refractory periods in a cardiac rhythm management device with biventricular sensing | 607/9   | 607/15                        | Stahmann; Jeffrey E. et al. |
| US 6522921<br>B2 | USPAT | 20030218 | System and method for eliminating cross-talk due to far-field signals  | 607/9   |                               | Stahmann; Jeffrey E. et al. |
| US 6512952<br>B2 | USPAT | 20030128 | Method and apparatus for maintaining synchronized pacing   | 607/9   |                               | Stahmann; Jeffrey E. et al. |
| US 6511444<br>B2 | USPAT | 20030128 | Transmyocardial revascularization using ultrasound   | 601/2   |                               | Hynynen; Kullervo et al.    |
| US 6502479<br>B1 | USPAT | 20030107 | Adjustable ramp helix  | 74/568R | 474/11;<br>474/19             | Lee; Kent                   |
| US 6501988<br>B2 | USPAT | 20021231 | Apparatus and method for ventricular rate regularization with biventricular sensing                                | 607/9   | 607/25                        | Kramer; Andrew P. et al.    |
| US 6493586<br>B1 | USPAT | 20021210 | Site reversion in cardiac rhythm management  | 607/27  | 607/28                        | Stahmann; Jeffrey E. et al. |
| US 6480742<br>B2 | USPAT | 20021112 | Pace counter isolation for cardiac resynchronization pacing  | 607/27  | 607/15                        | Stahmann; Jeffrey E. et al. |
| US 6480740<br>B2 | USPAT | 20021112 | Safety pacing in multi-site CRM devices  | 607/9   | 607/25                        | Stahmann; Jeffrey E. et al. |
| US 6459929<br>B1 | USPAT | 20021001 | Implantable cardiac rhythm management device for assessing status of CHF patients                                  | 600/513 | 600/510;<br>607/18;<br>607/20 | Hopper; Donald L. et al.    |
| US 6453201<br>B1 | USPAT | 20020917 | Implantable medical device with voice responding and recording capacity  | 607/62  | 600/586                       | Daum; Douglas R. et al.     |
| US 6438421<br>B1 | USPAT | 20020820 | Mode transition timing for synchronized pacing   | 607/9   |                               | Stahmann; Jeffrey E. et al. |
| US 6430439<br>B1 | USPAT | 20020806 | Method for collection of biventricular histograms  | 607/9   |                               | Wentkowski; Rene H. et al.  |
| US 6430438<br>B1 | USPAT | 20020806 | Cardiac rhythm management system with atrial shock timing optimization   | 607/5   |                               | Chen; Victor T. et al.      |
| US 6415180<br>B1 | USPAT | 20020702 | Device and method for ventricular tracking and pacing  | 607/9   |                               | Kramer; Andrew P. et al.    |
| US 6411848<br>B1 | USPAT | 20020625 | System providing ventricular pacing and biventricular coordination   | 607/9   | 607/25                        | Kramer; Andrew P. et al.    |

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|                  |       |          |   |         |                              | al.                         |
| US 6363278<br>B1 | USPAT | 20020326 | Cardiac rhythm management system with staggered pulses for coordination therapy                         | 607/9   |                              | Stahmann; Jeffrey E. et al. |
| US 6353759<br>B1 | USPAT | 20020305 | Cardiac rhythm management system promoting a trial pacing   | 607/9   |                              | Hartley; Jesse W. et al.    |
| US 6351669<br>B1 | USPAT | 20020226 | Cardiac rhythm management system promoting atrial pacing  | 607/5   |                              | Hartley; Jesse W. et al.    |
| US 6285907<br>B1 | USPAT | 20010904 | System providing ventricular pacing and biventricular coordination                                      | 607/9   | 607/25                       | Kramer; Andrew P. et al.    |
| US 6275727<br>B1 | USPAT | 20010814 | Implantable cardiac rhythm management device for assessing status of CHF patients                       | 600/513 | 607/17;<br>607/18;<br>607/20 | Hopper; Donald L. et al.    |
| US 5621460<br>A  | USPAT | 19970415 | Optical differentiation between plants and background utilizing a single CCD camera                     | 348/265 | 348/337                      | Hatlestad; John D. et al.   |
| US 5555464<br>A  | USPAT | 19960910 | Red/near-infrared filtering for CCD cameras   | 348/266 | 348/273;<br>348/280          | Hatlestad; John D.          |
| US 5376106<br>A  | USPAT | 19941227 | Multi-sensor blending in a rate responsive cardiac pacemaker  | 607/18  |                              | Stahmann; Jeffrey E. et al. |
| US 5343204<br>A  | USPAT | 19940830 | Auto-focusing correction for rotational acceleration effects on inverse synthetic aperture radar images | 342/25F | 342/195                      | Farmer; Michael E. et al.   |